Objective: To define their prognostic value in CHF.

Method and Result: Analysis of referrals to a community clinic for patients with CHF symptoms. Systolic CHF (S-HF) was defined as LVEF-45%, CHF with normal ejection fraction (HeFNEF) as LVEF>45% and NT-proBNP>50pmol.l-1; other subjects were defined as not having CHF.

Signs of congestion were No signs; right (RHC: oedema, jugular venous distension); left (LHC: lung crackles); or both (R+LHC). Of 1881 patients referred, 707 did not have CHF, 853 had S-HF, and 321 had HeFNEF. Their median (IQR) age was 72 years (64-78), 40% were women and LVEF was 47% (35-59). 417 had RHC of whom 49% had S-HF and 21% HeFNEF. 85 had LHC of whom 43% had S-HF and 20% had HeFNEF. 172 had R+LHC of whom 71% had S-HF and 16% HeFNEF. During a median (IQR) follow up of 64(44-76) months, 40% died. R+LHC signs was an independent maker of prognostic and indicated a bad prognosis (χ2-log-Rank test=186.1, p<0.0001).

Conclusion: Clinical signs of congestion in patients with CHF are independent predictors of prognosis in ambulatory patients with suspected chronic heart failure.

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Ventriculo-arterial coupling in heart failure with preserved or altered ejection fraction. Preliminary data

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Differences in pathophysiology of acute decompensated heart failure (HF) with preserved or altered ejection fraction (EF) remain unclear. We aimed to determine hemodynamic characteristics of patients admitted for acute HF according to their left ventricular EF.

Patients with a diagnosis of acute HF were included. Echocardiography was obtained within the first hour after hospital entry and at discharge. Left ventriculo-arterial coupling (VAC) was studied by non-invasive means.

Thirty patients were included. Two groups were considered: G1 with a preserved EF (n=11) and G2 with a reduced EF (n=19). Baseline systolic parameters are better in G1 than in G2 (all p<0.05), with similar blood pressure and heart rate: EF 0.56 (0.56-0.60) vs 0.34 (0.31-0,41); tissue Doppler s' wave 5.9+/–0.5 vs 4.5+/–1.3 cm/s. Raise of filling pressure and altered relaxation are shown in both groups: Vp 0.43 (0.36-0.55) vs 0.36 (0.30-0.50) m/s, p=NS; tissue Doppler e' wave 7.3+/–2.3 vs 5.7+/–1.6 cm/s, p<0.05, E/Vp 1.9+/–0.6 vs 2.2+/–0.7, p=NS; E/e' 15 (13-17) vs 16 (14-23), p=NS. Only E/e' is improved during hospitalization. Baseline VAC is different between groups (0.8+/–0.4 vs 1.4+/–0.4 mmHg/ml, p<0.01). Arterial elastance is equal in both group (2.1+/–0.8 vs 2.0+/–0.6 mmHg/ml, p=NS), but left ventricular end-systolic elastance is greater in G1 (3.4+/–2.2 vs 1.5+/–0.6 mmHg/ml, p=0.01). No difference is assessed at discharge, neither for VAC (1.1+/–0.2 vs 1.3+/–0.4, p=NS), for arterial elastance (2.1+/–0.4 vs 1.9+/–0.7 mmHg/ml, p=NS), nor for end systolic elastance (2.1+/–0.6 vs 1.6+/–0.6 mmHg/ml, p=NS).

In patients hospitalized for acute HF, altered relaxation is observed in both HF with preserved or depressed EF. Ventriculo-arterial coupling and end systolic elastance show different pattern between groups, suggesting important role of ventricular and arterial stiffness in pathophysiology of acute HF. Regarding the small size of our population, more data are needed.

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Time vortex formation in a experimental heart failure rat model as an index of mortality

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The aim of this study is to assess in a rat experimental model the pronostic value of a non invasive measure of left ventricular diastolic pressure and diastolic dysfunction with echocardiographic indexes in a model of heart failure. The experimental model will be done by clipping the transverse aortic cross (TAC) in 24 Wistar rats to obtained a pressure overload from the 15 days to the 90 days, operated rats were compared with sham animals during the study.

Methods: All the rats measurement protocole will be done under anasthesia (4mg/100g body weight).To accurately identified rats with the left ventricular filling pressures and diastolic dysfunction four measurement will be done with echocardiographic indexes, the ratio of early transmitral velocity flow (E) to early septal mitral annulus velocity flow(Ea) the exit mitral annulus diameter(D) the duration of E wave(t), the mean blood flow time average (U) the S annulus wave in DTI and also the Time Vortex Formation T= t X U /D and left ventricular relaxation time. Also the systolic parameters function were studied (LVEF, ventricular diameters cardiac output)

Statistical analysis: Data will be expressed as mean +/– SEM, the statistical analysis will be performed with the student's t test for paired and unpaired variates.

Results: diastolic dysfunction parameters were observed at 14 days in rats operated ans also at 90 days with a interaction between the time and the group.

- Left atrial diameter (6,37 mm+/–0,82 vs 3,9 mm+/–0,18; p<0,005).
- Left atrial surface (55 mm^2+/–2,34 vs 20,1 mm^2+/–2,04; p<0,005).
- S velocity wave (0,002 m/s+/–0,004 vs 0,0043 m/s+/–0,0006; p=0,05)
- Diameter annulus mitral (7,26 mm+/–1,47 vs 3,81 mm+/ 0,57; p=0,005)
- Time Vortex Formation (2,60+/–0,57 vs 3,81+/–v0,37; p =0,03)
- TRIVG (22,5 ms+/–1,52 vs 19,3 ms+/–1,02; p<0,005)
- Cardiac output (115 ml/mn+/–12 vs 185 ml/mn+/–10; p<0,005)
- E/Ea (34,5+/–8,07 vs 18,4+/–2,04; p=0,05).

In this work we test the hypothesis that the process ring formation during early diastolic ventricular dysfunction affects cardiac health as a index of mortality like previously clinical parameters observed in human

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Management of heart rate in 1578 patients with chronic heart failure

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Aims: Resting heart rate (HR) is showed to be an independent risk factor in heart failure (HF). Thus, HR had become an important therapeutic target for HF patients. The aim of this study is to determine the HR level at admission and during follow-up (FU) in patients followed in therapeutic unit of HF (TUHF) and to determine the number of patients achieving HR less than 70 bpm.

Methods: This study included 1578 patients with heart failure admitted from May 2006 to October 2010 (mean age of 64.6±12.3 years old, 64% were male). All patients were evaluated clinically with monitoring of HR, blood pressure; 6 min walk test and electrocardiogram. Two dimensional echocardiography and laboratory tests were performed in all patients.

Results: At admission, 58% of patients were in NYHA class II and 27% were in class III. The mean HR was 79.8±17.0 bpm, 31.9% had HR70 bpm, 20.1% had HR between 70 and 80 bpm, and 48 % had HR>80 bpm. 89% of patients were put on angiotensin-converting enzyme inhibitors (ACEI), 78% on betablockers (BB) with 73% on bisoprolol, 50 % on spirinolactone, and 12% on diuretics. After a FU period of 6.5±3.9 months, 75% of patients were in NYHA class I, 20% in class II, and 5% in class III. The mean HR decreased to 70.8±14.3 bpm (p=0.0001) with 58.6%70 bpm, 16.3% between 70 and 80 bpm, and 25.1%>80 bpm.

Conclusion: In spite of our effort to reduce HR, 41.4% of our patients still had HR>70bpm. We believe that reaching a full dose of BB and adding other medications to lower HR should be considered seriously in patients with HF.

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Heart failure in women: Moroccan experience (series of 525 patients)

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Heart failure is common especially among women. In Morocco like most developing countries there are no accurate statistics on the epidemiology of heart failure in women. We report the experience of cardiology center at University Hospital Ibn Rushd in Casablanca. A retrospective study from May 2006 to October 2010. Of 1500 patients there were 525 women so 35%,